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ABSTRACT

This paper describes the author's views on and approach to teaching about educational technology. The author teaches concepts, with an emphasis on "teaching about" rather than "teaching how". The author's educational background and experiences, and their influence on his current views are described. While the definitions of educational technology have changed fairly frequently in the past 30 years, the concepts that make up those definitions have not changed. As a result, it is important to teach primary concepts of educational technology, because those concepts have been around a long time and are at the root of most of what goes on in the field. The paper also describes an in-class activity in which students learn about educational technology concepts by identifying the five stages in the instructional development process--analysis, design, production/prototype/development, implementation, and evaluation--and discussing the different concepts, tasks, procedures, and ideas that can occur during the different stages. (SWC)

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I Teach Concepts

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What I think I do and why I think I do it

I teach concepts. Maybe not like Merrill and Tennyson (1977) suggest but I teach concepts nontheless. I suppose that most of you are thinking something like "big deal...I do too". I have no doubt that you do. I am sure that you teach concepts as part of instructional design (or even how to teach concepts), media utilization, computer applications, or whatever courses that you teach. But I think I do it differently than most of you do it. I suppose that most of you are thinking something like "well...we all teach differently." I agree. But there is more to it than selecting from a variety of sequencing or delivery strategies. I think that it is a general outlook on teaching. I think that I emphasize "teaching that" or "teaching about" rather than "teaching how" (Green, 1968).

First let me say that I do not believe that I am a better person than others in the field of educational technology because I teach concepts and they may have some other focus. But teaching concepts and the accompanying outlook works for me and my students at several different levels and so I do it. I'm sure that others do what works for them. Teaching concepts is overall a fundamental approach to the field.

I don't think that I invented anything new. People have "taught concepts" in a variety of fields of study for years. I have witnessed people teaching concepts in the field of education for over twenty years. This includes people with whom I have taken courses from the field of educational technology (Syracuse University). So its not new. But I do have my own twist.

I am comfortable teaching concepts. Here is a brief explanation why this is the case. In my ten and one half years as an undergraduate student I changed areas of concentration six to ten times (depending on how you count them) and often the only thing I was able to take with me from program to program were the concepts (not all the credits counted). Concepts like "good government" and "democracy" were/are as important to political scientists as they were to journalists, historians, and teachers. Since I majored in all of these areas at one time or another I made the best of the situation.

The first Master of Science Degree I was awarded was in the area of the Cultural Foundations of Education from the University of Wisconsin-Milwaukee. This program had an interdisciplinary approach to the study of education (given the amount of majors that I had as an undergraduate I suppose I'm a natural for an interdisciplinary approach). It seemed that the "thing" that unified the disciplines (history, philosophy, sociology, anthropology) in an interdisciplinary approach was the concept(s) that was being studied. I find that the concepts involved in educational technology are broader than, perhaps super ordinate to, any specific academic discipline which contributes to the knowledge base of the field (this means that the study of educational technology itself is interdisciplinary and the study of the concepts involved in educational technology is also interdisciplinary).

After I entered the graduate program in Instructional Design, Development, and Evaluation at Syracuse University it did not take very long before I realized that the field of educational technology was rich in concepts and ripe for picking (actually, given the name of the program, if I had been paying attention I might have figured this out earlier). I decided fairly early in my graduate studies in educational technology that it was possible to do lots of scholarship in, on, and around its concepts. I thought that the field might be ready for serious study without studying more "how to's" which I considered rather boring.

This was particularly gratifying since I was not thrilled by the prospect of conducting quantitative studies using quasi-experimental design techniques and/or inferential statistics. Its not that I still think that these kinds of studies are totally useless. They have and still can contribute to the development of some practical heuristics. But I do freely admit that I think that there can be no real "causal claims" made about our field (except perhaps that it sometimes causes me to wretch but even that's not guaranteed). I suppose that my distrust/dislike of quantitative methods in our field can also be attributed to some extent to my background in the cultural foundations of education.

In the second year of my studies at Syracuse two events occurred that, while they happened independently of each other, when taken together had a lasting effect on my outlook toward the field. Especially my outlook on my teaching and my scholarship which I consider to be inextricably intertwined.

The first of these events was a conversation that I was involved in with several of my graduate student colleagues (these students shall remain nameless because I can't really remember who they all were, or even how

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many of us were there but the number five sticks out in my mind). The outcome of the conversation was that there were about six to ten primary concepts in our field. A list of these included analysis, development, design, formative and summative evaluation, management, systems, and systematic. When understood from this perspective we realized that everything else that happened in our practice was a part of one of these primary concepts, or it was an interpretation of one of these primary concepts, or it was an application of one of these primary concepts. It all seemed so incredibly base. We asked each other "is this all there is?" (I think that it is interesting that left to their own devices graduate students can so easily get to the root of supposedly complex ideas, or at least they think they do. Not just the group that I talked about there are many such instances that can be recounted at different institutions. And not that graduate students are always right when they do this but interesting simplifications can occur. More interesting is that when many of these very same graduate students become faculty members they contribute to the literature which further complicates things. I'll deal with this in another paper at another time).

The second of these events was a personal conversation that I had with either Don Ely or Phil Doughty (I'm inclined to think it was Ely because I could more easily imagine myself having this conversation with him but I can't rule Doughty out with certainty). The gist of this conversation was that while it is true that definitions of educational technology/instructional technology have changed fairly frequently (historically speaking) in the past thirty years or so the concepts that make up those definitions or that are included in those definitions have not really changed. What seems to have happened was that while there has been a substantial movement from a "tools" conception of educational technology to a "systems" conception of educational technology the concepts that are used to discuss those differing conceptions stayed the same. But, the interpretations of those concepts (and subsequent practice involving those concepts) are very different in a tools conception of educational technology and a systems conception of educational technology. I took this to mean that if one wanted to get a good understanding of educational technology the concepts were ultimately more important than their applications (procedures).

What this has meant for my teaching in general and for my teaching about educational technology in particular is that I focus on the primary concepts because they have been around a long time and they are at the root of most of what goes on in the field. I think that is most important for students of educational technology to have a solid understanding of those primary concepts. As part of that understanding of the primary concepts I try to make sure that my students know that there are a number of different interpretations of each of the primary concepts and that professional practice will "play out" differently under each of those different interpretations. I think that this is particularly important for me because about sixty percent of my students are K-12 teachers and the remaining forty percent work, or are interested in working, in higher education, health education, the military the not for profit sector, or want to go on to do further graduate study. They will use the concepts differently. They will have different meanings.

This can be summed up in the following way: 'there is more than one right way to "do" educational technology. But this does not mean that "anything goes". There are wrong ways to do it as well'.

I have three brief comments in closing this section. First, if as Lakoff and Johnson suggest that concepts direct our thought (Lakoff and Johnson, 1980). Then it seems reasonable to assert that teaching concepts is not just an intellectual exercise. If concepts direct thought and if we think logically/rationally before we act (a basic premise of educational technology) then it is safe to claim that concepts and conceptual structures contribute greatly to our professional practice. So I feel justified in using the approach that I do.

Second, I try to help my students get at the meaning of concepts using a combination of four approaches to studying/analyzing concepts. These four approaches are: 1) a necessary and sufficient conditions approach. This approach dates back to Aristotle. The object is to describe the critical characteristics of a concept and to determine whether or not a particular instance (or example) is a member of a larger set (the larger set being the concept); 2) conceptual analysis. This has its history in analytic and linguistic philosophy of the twentieth century. The object here is to determine meaning through intent and use of a concept; 3) a paired opposites approach. The object here is to analyze two concepts simultaneously to see how they are the same and how they differ. Akin to a compare and contrast essay exam; and 4) metaphors. There are two approaches to metaphor (and I won't do either of them justice here). The first is to try to explain one concept in terms of another that is not immediately apparent. The object here is to provide an intentional comparison. The second is root metaphor. The object here is to analyze hidden meanings and implications through the way a particular concept is talked about.

Finally, I guess that this also has some implications for my teaching. It might be called "constructivist" or "anchored" or "situated" because of the strategies that I use to teach, the project structure that I use to assess student knowledge/progress, and because of the reasonably clean flow between my teaching and my student's projects. I make no such claim. Not because I think that these are bad ideas but because I don't think that I have a good

understanding of these ideas (at least I'm not satisfied with my ability to articulate my understanding of them). I have too much uncertainty about the basic categories or conceptions of constructivism, as epistemology, as a theory of learning, and as instructional theory.

An in class activity

In the third session of my course GRED 653 The Instructional Development and Planning Process we discuss Instructional Development Models (models might also be considered a primary concept of educational technology). This is a way of getting at the idea of the entire instructional development process and relating the instructional development process to problem solving, problem solving models, and problem solving strategies (the subject matter of session two). For this session the students will have read Kent Gustafson's book *Survey of Instructional Development Models* (1991 edition), a chapter from Cass Gentry's book *Introduction to Instructional Development* (1994), and a series of handouts including some definitions, diagrams, and lecture note organizers (not that I follow this lecture note organizer mind you, but it does give students the initial idea that I am well organized even if I don't always come off that way).

After some initial discussion about models in general and instructional development models in particular, I ask students to take a few minutes and write a description or definition of instructional development. When they are through I ask them to read their responses and I write these on the board (sometimes I use an overhead but usually the board because it can add to my theatrics). It doesn't take long before the board space is full and I have to begin focusing on words which are repeated and I circle or underline these and I add new and interesting phrases that are suggested as well.

The "lecture/discussion/analysis" that I do along the way (while they are reading their descriptions, more accurately in between their responses) is made up of two parts that occur at the same time. The first part is in response to the concepts that the students suggest that denote the activities included in instructional development (e.g.. analyze, design, manage, etc.). The other major focus of my "presentation" comes out of the words that the students use to describe the overall action of instructional development (e.g.. id is a system that..., id is a method for..., id is a process by which...etc.).

It doesn't take long before the students generally agree that there are five generic activities or stages in the instructional development process; analysis, design, production/prototype/development (this seems to be the toughest to get a general agreement on), implementation, and evaluation. It is further understood that there are different specific concepts, tasks, procedures, and ideas that can occur during the different stages.

The next activity involves an analysis of the concepts that are used to depict the overall instructional development process. I divide the class into small discussion groups and assign each of the groups the task of ranking some concepts as to the rigidity that they denote, a rigidity/flexibility scale if you will. Included in the list of concepts such as: approach, plan, method, process, procedure, system, direction, formula, framework, algorithm, recipe, blueprint, pattern, technique, heuristic, prescription, etc.,. Many of these come from the students descriptions and some I have to work in as well. In addition to ranking these concepts the students also explain their reasoning as to why they ranked the concepts as they did.

After students present their rankings and rationales and a general comparison/analysis occurs I have them to do one last activity as individuals. I ask them (again) to write a brief description of instructional development. After they have completed that task (and this is the big finish for me) I ask them to spend a few minutes thinking about their descriptions (as individuals) while they substitute or "plug in" each of the concepts that had ranked to characterize instructional development. After they have had a few minutes to do this I ask which of the concepts do they like/dislike and which of them completely change the meaning intended by their description/definition. A good discussion regarding the importance of precision and comfort with concepts has always followed.

There are several things that are important to note about the five stages in instructional development. Like the stages in John Dewey's "complete act of thought" (1933) I argue that these should not be thought of as steps in a procedure because this implies a certain linearity which is seldom if ever the case in real life. The fact of the matter is that we usually move from one stage to the next but we also jump around as new information becomes available for us to consider. Hence we can always be (and likely are) rethinking what we have done in light of new circumstances. We do this in a fluid fashion and not as stiffly as is implied by graphic representations in instructional development models

The bottom line for me is "comfort" with the concepts and conceptions of ideas (both what they mean and what they imply). This means that students have to know what and agree with what concepts represent and they

have to be comfortable with the label itself. Memorizing and adopting others conceptions is not good enough. If students aren't comfortable with their conceptions of ideas then it is much less likely that they will put these ideas into action in their professional lives. Perhaps even worse, if they are really ill at ease with particular concepts then they may work to resist particular actions associated with them. Its simply a matter of diffusion, adoption, or perhaps better yet, adaptation.

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